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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,119	03/11/2004	Yih-Lin Chung	55701-004002	8809

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EXAMINER	
PAGONAKIS, ANNA	

ART UNIT	PAPER NUMBER
1628	

NOTIFICATION DATE	DELIVERY MODE
03/18/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

INFO@ORTPATENT.COM

Office Action Summary	Application No.	Applicant(s)	
	10/798,119	CHUNG, YIH-LIN	
	Examiner	Art Unit	
	ANNA PAGONAKIS	1628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-23* is/are pending in the application.

4a) Of the above claim(s) *3,7-10,12,13 and 18-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 4, 11, 14-17 and 22-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment 1/24/2011 have been received and entered into the present application.

Applicant's arguments filed 1/24/2011 have been fully considered. Rejections not reiterated from previous Office Actions are hereby withdrawn. The following rejections are either reiterated or newly applied. They constitute the complete set of rejections presently being applied to the instant application.

Change of Examiner

The examiner assigned to the instant application has changed. The new examiner is Anna Pagonakis. Contact information is provided at the end of the Office Action.

Status of Claims

Claims 1-4 and 7-23 are pending.

Claims 3, 7-10, 12-13 and 18-21 remain withdrawn.

Claims 1-2, 4, 11, 14-17 and 22-23 are currently under examination and the subject matter of the present Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 22-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 22-23 claim "therapeutic gain in radiotherapy is (1), (2), (3) or (4)" and "therapeutic gain in radiotherapy is (5) or (6)," respectively. It is not clear what (1), (2), (3), (4), (5) or (6) Applicant is referring to. Clarification is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-2, 4, 11, 14-17 and 22-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, has possession of the claimed invention.

Present claim 1 has been amended to include the limitations: (1) downregulating inflammatory cytokinase or reducing inflammatory cell infiltration, (2) reducing or preventing radiation-induced tissue damage, the damage being selected from the group consisting of desquamation, dermatitis, mucositis, epidermal atrophy, fibrosis, ulceration, tissue necrosis and bulla formation, (3) increasing epithelium thickness, reducing dermis thickness or reducing vessel density."

In particular, the specification and claims as originally fail to provide adequate written description for the above mentioned newly added limitations. Applicant has failed to provided any guidance in their response as to where support can be found for the newly added limitations. Upon review of the instant disclosure, there seems to be no disclosure of these limitations. While it is recognized that adequate written description of a limitation is not required to be stated in haec verba in the specification or claims as originally filed, adequate written support for all claim limitations must arise from either an explicit or

an implicit suggestion by the disclosure to show that such a concept as now claimed was actually in possession of the Applicant at the time of the invention.

MPEP §2163 states, "The courts have described the essential question to be addressed in a description requirement issue in a variety of ways. An objective standard for determining compliance with the written description requirement is, "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." In re Gosteli, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989). Under Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. The test of sufficiency of support in a parent application is whether the disclosure of the application relied upon "reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter." Ralston Purina Co. v. Far-Mar-Co., Inc., 772 F.2d 1570, 1575, 227 USPQ 177, 179 (Fed. Cir. 1985) (quoting In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983))...Whenever the issue arises, the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. See, e.g., Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991)."

Accordingly, the claims are considered to lack sufficient written description and are properly rejected under 35 U.S.C. 112, first paragraph.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4, 11, 14-16 and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,877,213 [hereinafter referred to as "Samid"].

Samid et al. teach new approaches to the "treatment of human malignancies such as advanced prostatic cancer, melanoma, brain tumors, and others" (Col. 2, lines 35-38), including a method for treating cancerous conditions with phenylacetic acid and its pharmaceutically acceptable salts and derivatives, including sodium phenylbutyrate (Col. 2, lines 64-67; col. 4, lines 61-67; col. 5, lines 1-15; col. 7, lines 1-4; col. 7, lines 55-57), and as well, cancer prevention (Col. 11, lines 36-47). Samid et al also teach a method of treating the cancer with sodium phenylbutyrate concomitantly or in combination with conventional radiotherapy (Col. 7, lines 47-51). "The compounds of the present invention can be administered intravenously, enterally, parentally, intramuscularly, intranasally, subcutaneously, topically or orally" (Col. 3, lines 42-44). The dosage level of sodium phenylbutyrate administered ranges from 50 mg/kg/day to 1000 mg/kg/day (Col. 7, lines 14-21). Samid et al also teach that suitable formulations may include: soft gelatin capsules, dragees, pills, tablets, elixirs, suspensions, syrups, inhalations, rectal suppositories, implants, creams, gels, jellies, mucilages, pastes, ointments, infusion solutions, or nasal inhalations or sprays (Col. 24, lines 4-18).

With respect to chemotherapy (1) enhancing the suppression of tumor or proliferating cell growth in the subject; (2) sensitizing tumors to chemotherapy; (3) ameliorating complications or sequelae of a disorder induced by chemotherapy, the disorder being selected from the group consisting of mucositis, dermatitis, ulceration, tissue necrosis, fibrosis, xerostomia and plantar-plantar syndrome and (4) protecting normal tissues from cell death induced by chemotherapy **and** with respect to radiotherapy (1) downregulating inflammatory cytokinase or reducing inflammatory cell infiltration, (2) reducing or preventing radiation-induced tissue damage, the damage being selected from the group consisting of

desequamation, dermatitis, mucositis, epidermal atrophy, fibrosis, ulceration, tissue necrosis and bulla formation; (3) increasing epithelium thickness, reducing dermis thickness or reducing vessel density, (4) decreasing collagen deposition; (5) enhancing tumor radiosensitization or (6) downregulating fibrogenic growth factors or preventing late radiation-induced tumorigenesis, the administration of the elected sodium phenylbutyrate to patients undergoing chemotherapy or radiotherapy is expected to have the above mentioned claimed effects, whether recognized by the author or not. Products of identical chemical composition cannot exert mutually exclusive properties when administered under the same circumstance or, in the present case, the same host. Please reference MPEP 2112.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2, 4, 11, 14-17 and 22-23 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 5,877,213 [hereinafter referred to as "Samid"] in view of Shufeng, Z., et al., 5,6-

Dimethylxanthenone-4-acetic acid (DMXAA): A New Biological Response Modifier for Cancer Therapy, Investigational New Drugs, vol. 20, 2002, pages 281-295 [hereinafter referred to as "Shufeng, et al."].

The teachings of Samid, taught supra, are incorporated herein by reference.

Samid also teach that sodium phenylbutyrate may be administered in combination with an antitumor agent or biological response modifier (Col. 7, lines 30-33 and col. 27, lines 59-60) as a method of treating various cancers.

Samid is silent on the use off a biological response modifier agent such as 5,6-dimethylxanthenone-4-acetic acid.

Shufeng et al teach 5,6-dimethylxanthenone-4-acetic acid (DMXAA) as an investigational anti-cancer drug and as a biological response modifier (Summary, page 281, lines 1 and 31-32). Shufeng et al also teach that while DMXAA alone does not show "striking anti-tumor activity … preclinical studies of DMXAA-drug combinations indicate that DMXAA may have a potential role in cancer treatment when co-administered with other drugs" (Page 281, lines 31-34 and page 282, lines 1).

One of ordinary skill in the art would be motivated to combine the teachings of Samid with the teachings of Shufeng et al., because the references teach overlapping subject matter, most notably, the treatment of cancer with anti-cancer/anti-tumor agents. In light of the foregoing, one of ordinary skill in the art would be motivated to apply the teachings of Samid and the teachings of Shufeng et al to the present invention, because DMXAA is an anti-cancer agent/biological response modifier that when combined with radiotherapy and/or phenylacetic acid and its pharmaceutically acceptable salts and derivatives, including sodium phenylbutyrate, effectively treats various cancers. When used together, absent any express evidence to the contrary, in light of the foregoing, it would have been prima facie obvious to one of ordinary skill in the art that the proliferation of cancers and their associated tumors would be treatable through the combination therapy of sodium phenylbutyrate and DMXAA with radiotherapy.

With respect to chemotherapy (1) enhancing the suppression of tumor or proliferating cell growth in the subject; (2) sensitizing tumors to chemotherapy; (3) ameliorating complications or sequelae of a disorder induced by chemotherapy, the disorder being selected from the group consisting of mucositis, dermatitis, ulceration, tissue necrosis, fibrosis, xerostomia and plantar-plantar syndrome and (4) protecting normal tissues from cell death induced by chemotherapy **and** with respect to radiotherapy (1) downregulating inflammatory cytokinase or reducing inflammatory cell infiltration, (2) reducing or preventing radiation-induced tissue damage, the damage being selected from the group consisting of desequamation, dermatitis, mucositis, epidermal atrophy, fibrosis, ulceration, tissue necrosis and bulla formation; (3) increasing epithelium thickness, reducing dermis thickness or reducing vessel density, (4) decreasing collagen deposition; (5) enhancing tumor radiosensitization or (6) downregulating fibrogenic growth factors or preventing late radiation-induced tumorigenesis, the administration of the elected sodium phenylbutyrate to patients undergoing chemotherapy or radiotherapy is expected to have the above mentioned claimed effects, whether recognized by the author or not. Products of identical chemical composition cannot exert mutually exclusive properties when administered under the same circumstance or, in the present case, the same host. Please reference MPEP 2112.

Response to Applicant's Remarks

Applicant repeatedly alleges that as amended the claims are not obvious by Samid for covering the method of increasing gains (1)-(6) in radiotherapy. This is not found persuasive. As stated above, with respect to chemotherapy (1) enhancing the suppression of tumor or proliferating cell growth in the subject; (2) sensitizing tumors to chemotherapy; (3) ameliorating complications or sequelae of a disorder induced by chemotherapy, the disorder being selected from the group consisting of mucositis, dermatitis, ulceration, tissue necrosis, fibrosis, xerostomia and plantar-plantar syndrome and (4) protecting normal tissues from cell death induced by chemotherapy **and** with respect to radiotherapy (1) downregulating inflammatory cytokinase or reducing inflammatory cell infiltration, (2) reducing or preventing radiation-

induced tissue damage, the damage being selected from the group consisting of desequamation, dermatitis, mucositis, epidermal atrophy, fibrosis, ulceration, tissue necrosis and bulla formation; (3) increasing epithelium thickness, reducing dermis thickness or reducing vessel density, (4) decreasing collagen deposition; (5) enhancing tumor radiosensitization or (6) downregulating fibrogenic growth factors or preventing late radiation-induced tumorigenesis, the administration of the elected sodium phenylbutyrate to patients undergoing chemotherapy or radiotherapy is expected to have the above mentioned claimed effects, whether recognized by the author or not. Products of identical chemical composition cannot exert mutually exclusive properties when administered under the same circumstance or, in the present case, the same host. Please reference MPEP 2112.

Conclusion

No claim is found to be allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA PAGONAKIS whose telephone number is (571)270-3505. The examiner can normally be reached on Monday thru Thursday, 7am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brandon Fetterolf can be reached on 571-272-2919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP

/Brandon J Fetterolf/
Supervisory Patent Examiner, Art Unit 1628